



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2001-0037

April 6, 2001

Mr. Fred P. Patron
Senior Transportation Planning Engineer
Federal Highway Administration, Oregon Division
530 Center Street NE
Salem, OR 97301

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on the Larson Slough Bridge Replacement in Coos County, Oregon

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the Larson Slough bridge and tidegate replacement in Coos County, Oregon. The NMFS concludes in this Opinion that the proposed action is not likely to jeopardize the subject species or destroy or adversely modify critical habitat. NMFS has also included reasonable and prudent measures with non-discretionary terms and conditions that are necessary and appropriate to minimize the potential for incidental take associated with this project. In addition, this document also serves as consultation on Essential Fish Habitat (EFH) under Public Law 104-267, the Sustainable Fisheries Act of 1996, as it amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Questions regarding this letter should be directed to Nikki Moore of my staff in the Oregon State Branch Office at 541.957.3381.

Sincerely,

for Michael R. Crouse

Donna Darm
Acting Regional Administrator

cc: William Warnecke - ODOT
Michael Gray - ODFW
Paul Slater - Coos County Roads Department



Endangered Species Act - Section 7
Consultation
and
Magnuson-Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Larson Slough Bridge over Larson Creek
North Bay Drive County Road
Coos County, Oregon

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: April 6, 2001

Refer to: OSB2001-0037

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1. ENDANGERED SPECIES ACT

1.1. Background

On March 1, 2001, the National Marine Fisheries Service (NMFS) received a Biological Assessment (BA) and request from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 formal consultation for a bridge replacement project on the North Bay Drive County Road (County Road #74) off of Highway 101, near North Bend in Coos County, Oregon. The FHWA is contributing funding for the proposed replacement. The Oregon Department of Transportation (ODOT) is responsible for administering funds and the project contract. The Biological Assessment was prepared by Shapiro and Associates, Inc. (SHAPIRO) for ODOT. This biological opinion (Opinion) is based on the information presented in the BA (dated February 5, 2000) and information developed from the consultation process, including a site visit by NMFS staff on January 17, 2001.

The existing Larson Slough Bridge provides access to residential and public lands. The existing bridge has substandard timber bridge railing for support, no approach guardrail, and substandard roadway width. The timber support structures are deteriorating from severe rot. The proposed construction is to completely remove the existing structure and replace it with a new bridge built to current ODOT standards. In 1998, the average daily traffic (ADT) for this roadway was estimated to be 1,218 vehicles (BA). Projected ADT for the bridge has been estimated at 1,833 vehicles in the year 2020 (ODOT 2000, unpublished)

Larson Slough is a tributary to Haynes Inlet of the Coos Bay estuary. The Larson Slough Bridge is approximately four miles northeast of North Bend, Oregon, on North Bay Drive, which is connected to Highway 101, also known as the Oregon Coast Highway. Construction is scheduled for the summer and fall of 2001. The Oregon Department of Fish and Wildlife (ODFW) instream work window is from July 1 to September 15. In-water work will occur during July and August. All other work performed below the ordinary high water mark would still occur within the ODFW instream work window.

The FHWA/ODOT has determined that Oregon Coast (OC) coho salmon (*Oncorhynchus kisutch*) may occur within the project area and determined that the proposed action is likely to adversely affect OC coho salmon, using methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). In Oregon coastal streams south of the Columbia River and north of Cape Blanco, including Coos Bay and tributaries, the NMFS listed OC coho salmon under the ESA as threatened on August 10, 1998 (63 FR 42587), and designated critical habitat for this species on February 16, 2000 (65 FR 7764). Protective regulations for OC coho were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 4421). This consultation is undertaken under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

The objective of this Opinion is to determine whether the action to replace the Larson Slough Bridge in Coos County is likely to jeopardize the continued existence of the OC coho salmon or destroy or adversely modify its critical habitat.

1.2. Proposed Action

The FHWA/ODOT proposes to replace the existing three-span timber bridge, within the same location of the existing bridge, with improvements in roadway width and sight lines. The approximate locations of two existing outer abutments will be used for the new structure. Bridge approaches will be reconstructed to provide standard guardrails. The proposed structure is a single span, precast, prestressed concrete slab bridge, with a length of 38.3 feet and a width of 32 feet. The slabs will be supported on vertical concrete abutments with pile foundations. A two-tube, side-mounted bridge rail will also be used to minimize overall bridge width, construction costs, and environmental impacts. The bridge deck will have concrete drainage curbs which will extend 20 feet from the end of the bridge. The deck of the precast concrete slabs will be paved over the full length bridge. Approximately, 54 square meters of concrete fill would be used for the bridge, wingwalls, and tidegate frame. Mitigation for the fill includes constructing bioswales for stormwater runoff, riparian planting, and improving fish passage. To limit impacts, no traffic detour facility will be constructed. Three existing support pilings will be cut at or below the stream bottom, and taken to a HAZMAT approved disposal location. All heavy equipment used as part of the proposed action will be used from the existing roadway or streambank.

A tidegate currently exists at the mouth of Larson Slough, just downstream from the existing bridge. The FHWA/ODOT proposes to replace the tidegate as part of the proposed project in order to consolidate in-water work impacts, and to improve fish passage at the site. The existing tidegate is located below the bridge. The new tidegate will be constructed in the approximate location of the existing tidegate. The existing tidegate has two top-mounted, horizontally-hinged, wooden doors. The heavy wood doors require a significant differential water pressure to open during an outgoing tide, which is expected to delay fish passage during some flows. The proposed tidegate would have side-mounted, vertically hinged, lightweight, stainless steel doors that would open easily and stay open longer, particularly during tidal transitions from low-slack to the incoming tide. The side-mounted doors will be monitored and if requiring extensive maintenance, will be replaced with a lightweight, top-hinged door. The hinge will be placed during the proposed project, so if the doors are replaced, it would not require any in-stream work and would not impact aquatic resources. Both methods should increase the time the doors are open during low-slack/incoming tidal interchanges, and would provide a more natural salinity gradient between freshwater and saltwater, thus improving the environment for salmonids migrating between salt and freshwater. Additionally, increased mixing in the slough could improve water temperatures, although to what extent is unknown. The Larson Slough is currently listed on the Oregon Department of Environmental Quality (DEQ) 303(d) List of Water Quality Limited Water Bodies for temperature (DEQ 1999).

Prior to construction activities, erosion control measures will be installed at the site. These will include supported silt fences, straw bales, aggregate entrances, and coffer dams. A sheet-pile coffer dam will be constructed to isolate and dewater the area around the bridge and tidegate. The coffer dam will be 500 m² (5,382 ft²). ODOT Environmental Services will be contacted before dewatering of the site to remove salmonids. The coffer dam will be installed during the in-water work window to minimize the chance of trapping salmonids, and to minimize turbidity. Flow through the project area may be cut off for short periods (one to two weeks) during the tidegate removal and replacement of the new tidegate frame. During this period, flow from the project site would be pumped around the work area. All pumps would be screened according to NMFS' Juvenile Fish Screen Criteria for Pump Intakes (2/16/95, amended 5/9/96).

A culvert, with a tidegate door attached to the bay end, will be placed in the isolated area to maintain flow and fish passage through the project site during construction. If coho salmon were present during the proposed work window they could be delayed during high tide periods when the tidegate door would be closed. This is not consistent with standards within ODFW/Oregon Road Stream Crossing Restoration Guide (1999). However, if the culvert were left open during high tides, private land upstream of the project site could be flooded. The existing tidegate has prevented a salt water exchange above the bridge since installation, so the culvert would maintain existing conditions. Based on recommendations by ODFW the applicant will leave the culvert tidegate open unless high tides great enough to flood the existing dikes are expected.

1.3. Biological Information and Critical habitat

The OC coho salmon Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by the NMFS on August 10, 1998 (63 FR 42587). NMFS described the current population status of OC coho salmon in a status review (Weitkamp *et al.* 1995), and in the final listing rule (August 10, 1998, 63 FR 42587). Abundance of wild coho salmon spawners in Oregon coastal streams declined during the period from 1965 to 1975 and has fluctuated at a low level since that time (Nickelson *et al.* 1992). In 1990, spawner abundance within the Oregon Coast ESU was estimated to be 16,500. Abundance increased between 1992 and 1996 with an abundance in 1996 of 59,453. Abundance declined again in 1997 and 1998 to 14,068 and 19,816 spawners; respectively (ODFW Coastal Salmonid Inventory, 2000). Current spawning escapements for this ESU may be at less than 5% of abundance in the early 1900's. Contemporary production of coho salmon may be less than 10% of the historic production (Nickelson *et al.* 1992). Average recruits-per-spawner may also be declining. The OC coho salmon ESU, although not at immediate risk of extinction, may become endangered in the future if present trends continue (Weitkamp *et al.* 1995). Within the Coos basin, returns of wild adult coho salmon have declined from highs of 16,545 in 1992 to 1,127 in 1997. In 1999, abundance was estimated to be 4,867 spawners (ODFW Coastal Salmonid Inventory, 2000).

Critical habitat was designated for OC coho salmon on February 16, 2000 (65 FR 7764). Critical habitat for OC coho salmon ESU encompasses the major coastal tributaries between the Columbia

River and Cape Blanco (exclusive of the Columbia River) known to support this ESU, including the Umpqua, Coos, Coquille, Siuslaw, and Nehalem rivers. Critical habitat consists of all waterways below long-standing, naturally impassable barriers, which includes the project area. The adjacent riparian zone is also considered critical habitat. This zone is defined as the area that provides the following functions: shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter. Protective regulations for OC coho were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 4421).

1.4. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements and current status of the listed species; and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult migration, spawning, and rearing of the OC coho under the existing environmental baseline.

1.4.1. Biological Requirements

The first step in the methods the NMFS uses for applying the ESA section 7(a)(2) to listed OC coho is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for OC coho to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment. For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing.

Biological information for the species within Larson Creek is based on conversations with Michael Gray, ODFW. OC coho salmon are known to spawn and rear in the Larson Creek watershed. Larson Creek is considered one of the most productive wild coho streams in the Coos basin. Coho salmon utilize Larson Slough during their spawning migration. Coho smolts outmigrate during spring and early summer, with the majority of migration occurring during April and May. Although the majority of smolts have migrated past the project site during the proposed work window (July - August), a few smolts could be present in the project area during construction. Coho smolts and juveniles are not likely to utilize Larson Creek within the project area for rearing or foraging habitat, because of a lack of tidal marsh habitat resulting from the operation of the existing tidegate. Additionally, high water temperatures within the slough and a lack of adequate habitat would likely preclude coho from rearing within or near the project site.

1.4.2. Environmental Baseline

The current range-wide status of the OC coho ESU may be found in Weitkamp et al. 1995. The identified action will occur within the range of OC coho. The defined action area is the area that is directly and indirectly affected by the proposed action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where actions described in this Opinion lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the proposed activities include the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the streambed and riparian habitat of Larson

Slough, upstream from the project site 100 feet, and downstream 300 feet within the Haynes Inlet of the Coos Bay.

The action area is within the Larson Slough watershed of the Coos River Basin. Larson Creek originates in the Elliott State Forest approximately eight miles northeast of the City of North Bend, Oregon. Larson Creek flows from east to west for approximately 11.3 miles, flowing through multiple land use areas including public and industrial timberland and private agricultural land. The confluence of Larson Creek with the Coos River (Haynes Inlet) is located approximately 20 feet downstream of the bridge project site. The Coos River flows into the Pacific Ocean approximately 10 miles downstream of this confluence.

Land use near the bridge is residential and agriculture. Historically, the valley bottom area was characterized by tidally-influenced, extensive marshes which provided abundant salmonid rearing and foraging areas. The Larson Creek watershed, and in particular the vicinity of the project area, has undergone extensive changes since European American settlement. Agricultural practices, timber harvest, residential development, and road construction has altered aquatic habitat and reduced aquatic resources available within the watershed. Extensive diking upstream from the project site has eliminated tidal wetlands and reduced floodplain connectivity, resulting in a relatively straight homogeneous channel. Pool frequency and pool quality has been reduced over time from these effects. The active stream channel at the bridge site is approximately 30 feet wide. Larson Slough has been dredged in the past because of significant sediment deposition brought on by the constriction of the tide gate, which has created a very shallow channel upstream from the bridge. The new tidegate would be installed with a lower invert elevation, allowing more natural transport of sediment, resulting in a deeper channel. Because of the relatively low flows of Larson Slough (approximately 1.0 meter per second during the 25-year design flood), existing sediment buildup behind the tidegate is expected to be flushed gradually from the channel over time, and predominantly during high flows, when it would be undetectable from background levels. There is no large woody debris or fish cover adjacent to the site, and because of the agricultural and residential nature of adjacent lands, limited vegetation and large woody debris in the surrounding area. The ODFW defined in-water work period for Larson Creek, including the project site, is July 1-September 15 (ODFW 2000).

Based on the best available information on the current status of OC coho range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area (as described in the BA), NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. Numbers of OC coho salmon are substantially below historic numbers and long-term trends are decreasing. Degraded freshwater habitat conditions have also contributed to the decline, although current habitat restoration efforts are contributing to reversing these conditions.

Use of the NMFS Matrix of Pathways and Indicators (NMFS 1996) identified the following habitat indicators as either at risk or not properly functioning within the action area: Water temperatures,

turbidity/sediment, chemical contamination/nutrients, physical barriers, substrate, large woody debris, pool frequency and quality, off-channel habitat, refugia, streambank condition, floodplain connectivity, change in peak/base flows, drainage network increase, riparian reserve, and disturbance history and regime. Actions that do not maintain or restore properly functioning aquatic habitat conditions have the potential to jeopardize the continued existence of OC coho salmon.

1.5. Analysis of Effects

1.5.1. Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document, *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of proposed actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area.

The proposed action has the potential to cause the following impacts to threatened OC coho or it's designated critical habitat:

1. In-water work may cause direct adverse impacts to any coho that may be present near the work site.

During construction, the construction of coffer dams, and water in the active flowing channel being diverted around the work site have the potential of harming fish in the vicinity of the project site from behavior disturbance or direct mortality. Entrained fish removed from the coffer dams, either through electrofishing or seining, may die. Culverts will be placed in the work area to maintain flow and fish passage through the project site during construction. However, flow may be restricted for short periods of time during a one to two week period in order to replace the tidegate frame. This activity has the potential to delay outmigrant coho smolts in the vicinity of the project area, although it is not expected to prevent their eventual outmigration. However, very few, if any, OC coho are expected to be present at the project site during construction.

Other adverse impacts include sedimentation that may occur following construction in the event of precipitation which could cause some erosion of the work area before streambank vegetation has re-established. This would have the potential to create temporary displacement of rearing juvenile salmonids downstream.

2. Riparian function will be impaired, causing indirect adverse impacts to coho.

The bridge replacement will result in minor loss of riparian function by the removal of streambank herbaceous vegetation. This may result in a short-term (less than two years) loss of primary production and temporary bank instability. The vegetation at the work site is primarily non-native, including reed canary grass (*Phalaris arundinacea*) and Himalayan blackberry (*Rubus discolor*). Vegetation loss will be mitigated by seeding with native plant stock and riparian planting, which should provide a riparian benefit to the site. No fertilizer will be used.

The effects of these activities on OC coho and aquatic habitat indicators will be limited by implementing construction methods and approaches included in the project design that are intended to avoid or minimize impacts. These include:

- All in-water work will be conducted during the ODFW in-water work period of July 1 to September 15. This will avoid impacts to migrating adult OC coho.
- When using pumps to divert flow around the isolated area (only authorized for up to a two week period) to replace the tidegate, they will be screened according to NMFS' Juvenile Fish Screen Criteria for Pump Intakes. Precautionary measures will be implemented to minimize the risk of fuel reaching the work area during pump refueling.
- Alteration and disturbance of stream banks and existing riparian vegetation will be minimized to the extent possible. No trees will be removed. When working within the two-year floodplain, bank protection material will be placed to maintain normal waterway configuration.
- ODOT will minimize the amount of erosion and consequently, sedimentation, during both phases of construction through the use of specific erosion control measures that will prevent the entry of silt into Larson Creek.
- Equipment used to remove the existing structure and for the placement of two abutment walls would be staged on the existing road and would reach into the stream channel from that surface.
- No rip rap will be used.
- Disturbed riparian vegetation at the project site will be replanted with native vegetation.

For the proposed action, the NMFS expects that the effects of the proposed project will tend to maintain each of the habitat elements over the long term. However, in the short term, a temporary increase in sediment entrainment and turbidity (for a few weeks during and immediately following construction), and disturbance of riparian and instream habitat is expected. Fish may be temporarily

displaced during work within the two year floodplain. The potential net effect from the proposed action, including proposed re-seeding, is expected to maintain existing habitat conditions for OC coho salmon. Fish passage is expected to be improved at the site in the short and long term.

1.5.2. Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for OC coho consists of all waterways below naturally impassable barriers, including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, input of large woody debris or organic matter, and others.

Environmental baseline conditions within the action area were evaluated for the subject actions at the project site and watershed scales. The results of this evaluation is based on the “matrix of pathways and indicators” (MPI) described in "Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale” (NMFS 1996). This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species, and assesses the constituent elements of critical habitat. An assessment of the essential features of OC coho salmon critical habitat is obtained by using the MPI process to evaluate whether aquatic habitat is properly functioning.

The proposed actions will affect critical habitat. In the short term, a temporary increase of sediments and turbidity and disturbance of riparian and instream habitat is expected. In the long term, however, riparian function will be restored because planting a native seed mix, including native shrubs and trees, will provide shading of the creek and improved bank stability over time. Consequently, NMFS does not expect that the net effect of this action will diminish the long-term value of the habitat for survival of OC coho salmon.

1.5.3. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area is defined as the streambed and riparian habitat of the Larson Slough bridge and tidegate and extends 100 feet upstream of the project site and 300 feet downstream. The project actions consist of removing the existing bridge structure, placing two new abutments, replacing the existing tidegate, and replacing the bridge deck. NMFS assumes future timber harvest on both federal and private lands within the watershed can be expected, although specific activities are not known at this time. NMFS assumes that future private and State actions will continue

at similar intensities as in recent years. Associated road and commercial development, as well as maintenance and upgrading of the existing infrastructure are likely foreseeable actions within the watershed. In addition, agricultural practices are expected to continue in the lower portions of the Larson Creek watershed. Restoration of wetlands is expected to continue to occur on private lands in Larson Slough.

1.6. Conclusion

NMFS has determined, based on the available information, that the proposed action is expected to maintain existing stream habitat conditions within the action area, and will likely improve certain habitat conditions over the long term. As such, the proposed action covered in this Opinion is not likely to jeopardize the continued existence of OC coho salmon. NMFS used the best available scientific and commercial data to apply its jeopardy analysis when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction, and habitat loss. These effects will be mitigated over the long-term through the implementation of native plant re-seeding and improved hydrologic conditions and fish passage. Direct harm to juvenile OC coho because of altered rearing and migration behavior may occur during the in-water work period for project activities, but this likelihood is low because of the low potential for juvenile OC coho being present at the work site during construction.

1.7. Reinitiation of Consultation

Consultation must be reinitiated if: 1) The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; 2) new information reveals effects of the action may affect listed species in a way not previously considered; 3) the action is modified in a way that causes an effect on listed species that was not previously considered; or, 4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To reinitiate consultation, the FHWA/ODOT must contact the Habitat Conservation Division (Oregon Branch Office) of NMFS.

2. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not

limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of OC coho salmon because of detrimental effects from increased sediment levels (non-lethal), the potential for direct incidental take during in-water work (non-lethal), and direct take associated with capturing and relocating stranded coho within the isolated work areas (lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on coho habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. For the purposes of this Opinion, the extent of non-lethal take is limited to the area of project disturbance, extending 100 feet upstream and 300 feet downstream of the area of disturbance around the bridge work. Lethal take is defined as and limited to killing and harm, as is limited to the isolated work areas (capture and removal of fish). Lethal take shall not exceed 25 juvenile OC coho salmon.

2.2. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from construction activities at the Larson Slough Bridge, measures shall be taken to limit the duration and extent of in-water work, and to time such work that the impacts to OC coho are minimized.

2. To minimize the amount and extent of incidental take from construction activities in or near the creek, effective erosion and pollution control measures shall be developed and implemented throughout the area of disturbance and for the life of the project. The measures shall minimize the movement of soils and sediment both into and within the creek, and stabilize bare soil over both the short term and long term.
3. To minimize the amount and extent of take from loss of instream habitat and to minimize impacts to critical habitat, measures shall be taken to minimize impacts to riparian and instream habitat, or where impacts are unavoidable, to replace or restore lost riparian and instream function.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures and plantings for site restoration shall be monitored and evaluated both during and following construction, and meet criteria as described below in the terms and conditions.

2.3. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, FHWA/ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to fish and Larson Creek critical habitat. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure # 1 (in-water work) above, the FHWA/ODOT shall ensure that:
 - a. Passage shall be provided for both adult and juvenile forms of all salmonid species throughout the construction period, except during high tides when upstream property would be impacted. During normal flows and tidal exchanges the FHWA/ODOT designs will ensure passage of fish as per ORS 498.268 and ORS 509.605 (Oregon's fish passage guidance).
 - b. All work within the active channel of Larson Creek will be completed within ODFW's in-water work period (July 1-September 15). Staging plans for temporary waterway diversions will be submitted and approved by ODOT Environmental Staff prior to proceeding with associated in-water activities. Any additional extensions of the in-water work period will first be approved by, and coordinated with, NMFS and ODFW.
 - c. All in-water work will be done within a cofferdam (sheet pilings), or similar structure, to minimize the potential for sediment entrainment. After the coffer dam is in place, any fish trapped in the isolation pool will be removed prior to dewatering, using ODFW-approved methods.

- i. Within three months of any fish removal activities, the FHWA/ODOT shall provide a report to NMFS that contains all of the information for reporting take that is contained in the 2001 Oregon Department of Fish and Wildlife Scientific Taking Permit application.
 - ii. In the event that any listed species is injured or killed, care will be taken in handling of injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death and ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.
 - iii. If the lethal take limit is exceeded, construction operations shall stop. FHWA/ODOT will notify the Oregon State Branch of the NMFS, Habitat Conservation Division, at 541.957.3381. Exceeding the take limit requires reinitiation of section 7 consultation.
 - d. Alteration or disturbance of stream banks and existing riparian vegetation will be minimized. Where bank work is necessary, bank protection material shall be placed to maintain normal waterway configuration.
 - e. During excavation, native streambed materials will be stockpiled out of the two-year floodplain and tidal influence area for later use in backfilling the trenches used to construct the coffer dams.
 - f. Any water diversions or withdrawals done for the purpose of supplying water for construction or for riparian plantings will comply with all state and federal laws, particularly those that require a temporary water right and fish screening of intakes. The FHWA/ODOT shall be responsible for informing all contractors of their obligations to comply with existing, applicable statutes.
 - g. During tidegate replacement, flow through the project area will only be cut off for short periods and no more than two consecutive weeks. Pumps will be screened according to NMFS' Juvenile Fish Screen Criteria for Pump Intakes.
2. To implement reasonable and prudent measure # 2 (construction activities) above, the FHWA/ODOT shall ensure that all erosion and pollution control measures included in the February 5, 2000, BA are included as special provisions in the Larson Slough bridge replacement contract. Based on prior project evaluations, the NMFS requires FHWA/ODOT to pay particular attention to preparation of an erosion control plan (ECP) as follows: An ECP will be prepared by ODOT or the Contractor, and implemented by the Contractor. The ECP will outline how and to what specifications various erosion control devices will be installed to

meet water quality standards, and will provide a specific inspection protocol and time response. Erosion control measures shall be sufficient to ensure compliance with applicable water quality standards and this Opinion. The ECP shall be maintained on site and shall be available for review upon request.

- a. Effective erosion control measures shall be in-place at all times during the contract. Construction within the project vicinity will not begin until all temporary erosion controls (e.g., sediment barriers and containment curtains) are in place. Erosion control structures will be maintained throughout the life of the contract.
 - i. Stormwater runoff will be collected at the inlet and piped to vegetated swales constructed at all four corners of the new bridge. This will filter any water entering the stream.
 - ii. When the erosion control features are at 2/3 capacity they will be cleaned and maintained. They will be inspected regularly during construction to ensure that they are functioning as intended, and daily during periods of precipitation. Any failure of erosion control measures will be corrected immediately to maintain sedimentation controls.
- b. All exposed areas will be replanted with a native seed mix. Erosion control planting will be completed on all areas of bare soil within 14 days of completion of construction.
- c. All equipment that is used for instream work will be cleaned prior to entering the two-year floodplain. External oil and grease will be removed, along with dirt and mud. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment.
- d. Material removed during excavation shall only be placed in locations upland, at least 50 feet from the two year floodplain, where it cannot enter the permitted work area or any other waters of the state of Oregon. Conservation of topsoil (removal, storage and reuse) will be employed.
- e. Measures will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- f. Project actions will follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ's provisions for maintenance of water quality standards. Toxic substances shall not be introduced above natural background levels in waters of the State in amounts which may be harmful to aquatic life, and any turbidity caused by this

project shall not exceed DEQ water quality standards, as described in Oregon Administrative Rules (OARs) Division 41.

- g. The Contractor will develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The Contractor will be monitored by the ODOT Engineer to ensure compliance with this PCP. The PCP shall include the following:
 - i. A site plan and narrative describing the methods of erosion/sediment control to be used to prevent erosion and sediment for contractor's operations related to disposal sites, borrow pit operations, haul roads, equipment storage sites, fueling operations and staging areas.
 - ii. Methods for confining and removing and disposing of excess construction materials, and measures for equipment washout facilities.
 - iii. A spill containment and control plan that includes: Notification procedures; specific containment and clean up measures which will be available on site; proposed methods for disposal of spilled materials; and employee training for spill containment.
 - iv. Measures to be used to reduce and recycle hazardous and non-hazardous waste generated from the project, including the following: Types of materials, estimated quantity, storage methods, and disposal methods.
 - v. The person identified as the Erosion and Pollutant Control Manager (EPCM) shall also be responsible for the management of the contractor's PCP.
- h. Areas for fuel storage, refueling and servicing of construction equipment and vehicles will be located as far away as possible from any waterbody (given the site conditions) and all machinery fueling and maintenance will occur within a contained area. Overnight storage of wheeled vehicles must also occur as far away as possible from the two-year floodplain of any waterbody. Overnight storage of non-wheeled vehicles is allowed within the two-year floodplain during the in-water work window; however, to minimize the risk of fuel reaching the water, refueling of these vehicles should not occur after 1:00 pm (so the vehicles do not have full tanks overnight).
- i. Hazmat booms will be installed in all aquatic systems where:
 - i. Significant in-water work will occur, or where significant work occurs within the five-year floodplain of the system, or where sediment/toxicant spills are possible.
 - ii. The aquatic system can support a boom setup (i.e. the creek is large enough, low-moderate gradient).

- j. Hazmat booms will be maintained on-site in locations where there is potential for a toxic spill into aquatic systems. "Diapering" of vehicles to catch any toxicants (oils, greases, brake fluid) will be mandated when the vehicles have any potential to contribute toxic materials into aquatic systems.
 - k. No surface application of nitrogen fertilizer will be used within 50 feet of any aquatic resource.
3. To implement reasonable and prudent measure # 3 (riparian habitat protection) above, FHWA/ODOT shall ensure that:
- a. Alteration of native vegetation will be minimized. Where native vegetation will be altered, take measures to ensure that roots are left intact. This will reduce erosion while still allowing room to work. No protection will be made of invasive exotic species (e.g. Himalayan blackberry), although no chemical treatment of invasive species will be used.
 - b. Riparian vegetation removed will be replaced with a native seed mix, shrubs, and trees. Replacement will occur within the project vicinity.
4. To implement reasonable and prudent measure # 4 (monitoring) above, FHWA/ODOT shall ensure that:
- a. Erosion control measures as described above in 2(d) shall be monitored.
 - b. All significant riparian replant areas will be monitored to insure the following:
 - i. Finished grade slopes and elevations will perform the appropriate role for which they were designed.
 - ii. Plantings are performing correctly and have an adequate success rate (success rate depends on the planting density, but the goal is to have a functional riparian vegetation community).
 - c. Failed plantings and structures will be replaced, if replacement would potentially succeed. If not, plantings at other appropriate locations will be done.
 - d. A plant establishment period (three year minimum) will be required for all riparian mitigation planting. In extremely unstable or unproductive areas, ODOT may be released from the establishment period and develop a larger replanting area to compensate for this.

- e. By December 31 of the year following the completion of construction, FHWA/ODOT shall submit to NMFS (Oregon Branch) a monitoring report with the results of the monitoring required in terms and conditions 4(a) to 4(c) above.

3. ESSENTIAL FISH HABITAT

Public Law 104-267, the Sustainable Fisheries Act of 1996, amended the Magnuson-Stevens Act to establish new requirements for “Essential Fish Habitat” (EFH) descriptions in Federal fishery management plans and to require Federal agencies to consult with NMFS on activities that may adversely affect EFH, defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed groundfish (PFMC 1998a), coastal pelagics (PFMC 1998b) and Pacific salmon fisheries (PFMC 1999). EFH includes those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery (*i.e.*, properly functioning habitat conditions necessary for the long-term survival of the species through the full range of environmental variation).

The Magnuson-Stevens Act requires consultation for all actions that may adversely affect EFH, and it does not distinguish between actions in EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

The consultation requirements of section 305(b) of the Magnuson-Stevens Act (16 U.S.C. 1855(b)) provide that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

3.1. Identification of Essential Fish Habitat

The Coos River estuary (Larson Slough) is designated as EFH for chinook, coho, groundfish and coastal pelagic species (PFMC 1998a and PFMC 1998b). The marine extent of groundfish and coastal pelagic EFH includes those waters from the nearshore and tidal submerged environments within Washington, Oregon, and California state territorial waters out to the exclusive economic zone (200 miles) offshore between the Canadian border to the north and the Mexican border to the south.

The designated salmon fishery EFH includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except above the impassable barriers identified by PFMC (PFMC 1999). Chief Joseph Dam, Dworshak Dam, and the Hells Canyon Complex (Hells Canyon, Oxbow, and Brownlee Dams) are among the listed man-made barriers that represent the upstream extent of the Pacific salmon fishery EFH. Salmon EFH excludes areas upstream of longstanding naturally impassable barriers (i.e., natural waterfalls in existence for several hundred years). In the estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999). The proposed action area encompasses the Council-designated EFH for chinook salmon (*Onchorhynchus tshawytscha*) and for coho salmon (*O. kisutch*).

3.2. Proposed Action

The proposed action is detailed above, in section 1 of this Opinion. The proposed action area includes the tidally influenced Larson Slough upstream from the project site, and downstream 300 feet within the Haynes Inlet of the Coos Bay estuary. These waters flow into the Pacific Ocean, thus contributing to the estuarine environment. The estuarine and offshore marine waters are designated EFH for various life stages of 62 species of groundfish and 5 coastal pelagic species. A detailed description and identification of EFH for coastal pelagic species is found in Amendment 8 to the Coastal Pelagic Species Fishery Management Plan (PFMC 1998b). The proposed action area also encompasses the Council-designated EFH for chinook and coho salmon. A description and identification of EFH for salmon is found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the impacts to these species' EFH from the above proposed FHWA action is based on this information.

The objective of this EFH consultation is to determine whether the proposed action may adversely affect EFH for the species listed above. Another objective of this EFH consultation is to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse impacts to EFH resulting from the proposed action.

3.3. Effects of the Proposed Action

NMFS expects that the effects of this project on chinook and coho salmon EFH, as well as those for coastal pelagics and groundfish, are likely to be within the range of effects to listed coho salmon considered in the ESA portion of this consultation. Based on that analysis, NMFS finds that the proposed project is likely to adversely affect EFH for coho and chinook salmon, and may also adversely affect EFH for groundfish and coastal pelagics.

3.4. Conservation Recommendations

The conservation measures that FHWA/ODOT included as part of the proposed action are adequate to minimize the adverse impacts from this project to designated EFH for salmon, groundfish, and coastal pelagics. It is NMFS' understanding that FHWA/ODOT intends to implement the proposed activity with these built-in conservation measures that minimize potential adverse effects. Furthermore, the reasonable and prudent measures and the terms and conditions outlined above in section 2 are applicable to designated EFH. Consequently, NMFS has no additional conservation recommendations to make at this time.

3.5. Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NMFS' EFH conservation recommendations within 30 days of its receipt of this letter. However, since NMFS did not provide conservation recommendations for this action, a written response to this consultation is not necessary.

3.6. Consultation Renewal

The FHWA/ODOT must reinitiate EFH consultation with NMFS if the action is substantially revised in a manner that may adversely affect EFH or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR Section 600.920[k]).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

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